



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Faquir JAIN and Fotios PAPADIMITRAKOPULIS

Art unit: 1774

Serial No. 09/547,415

Examiner: GARRETT, Dawn

Filed: April 11, 2000

For: FULL COLOR DISPLAY STRUCTURE USING CNC THIN FILM

AMENDMENT (marked-up copy)

Commissioner for Patents  
P.O. Box 1450  
Alenxandria, VA 22313-1450

Sir:

In response to USPTO communication dated Sept. 17, 2003, please amend the application as follows:

IN THE CLAIMS;

Claim 1. (currently amended) A *p-n* junction electroluminescent (EL) device, comprising successive multiple layers of:

a semiconductor-on-insulator substrate;

a first p-type Si layer grown on said substrate, part of the layer being oxidized to isolate the electrodes at the bottom of said device;

a thin layer of Si thinner than the substrate which allows further epitaxial growth;

a second p-type semiconductor layer grown epitaxially;

a layer comprising pseudomorphic cladded quantum dots nanocrystals (CNCs) with narrower energy gap semiconductor layer than said *p-type* layer deposited on the said [wide energy gap] second p-type layer for lattice-matching and electroluminescence;

[a] an n-type semiconductor layer thinner than the substrate, having [n-type conductivity and] wider energy gap than the cladded quantum dot nanocrystals (CNCs) grown on the CNC layer; and

a metal layer forming a plurality of top contact electrodes deposited on the n-type wide energy gap semiconductor layer having patterned regions to confine current conduction in pixels of said EL device.

Claim 2. (currently amended) The EL device of claim 1, wherein the [thin wide energy gap] second p-type semiconductor layer over said CNC layer is undoped.

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